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ARRANGEMENT FOR IMPLEMENTING KERNEL BYPASS FOR ACCESS BY USER MODE CONSUMER PROCESSES TO A CHANNEL ADAPTER BASED ON VIRTUAL ADDRESS MAPPING

ABSTRACT OF THE DISCLOSURE

A consumer resource provider is configured for generating a work request to a prescribed virtual destination address on behalf of a user-mode consumer process requiring a memory access. An operating system resource, configured for establishing communications between the consumer resource provider and a host channel adapter configured for servicing the work notifications, assigns

5   virtual address space for use by the consumer resource provider, and respective unique mapping values specified as user mode access for use by the consumer resource provider in executing the memory accesses on behalf of the respective user-mode consumer processes. An address translator includes a translation map for uniquely mapping the virtual address space used by the consumer resource provider to a prescribed physical address space accessible by the host channel adapter. The address

10   translator, in response to receiving the work notification at a virtual address from the consumer resource provider on behalf of an identified user-mode consumer process, maps the work notification to a corresponding prescribed physical address based on the corresponding mapping value assigned for the identified user-mode consumer process, enabling the host channel adapter to detect the work notification at the mapped physical address.

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